

REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Final Office Action mailed May 11, 2011. In view of the amendments above and remarks to follow, reconsideration and allowance of this application are respectfully requested.

Status of Claims

Upon entry of the present amendment, claims 1-18 and 20-27 will remain pending in this application. Claims 1 and 17-19 have been amended. Applicants respectfully submit that no new matter is added by the present amendments. In light of the above amendments and the following remarks, Applicants respectfully submit that all presently pending claims are in condition for allowance.

Double Patenting

Claims 1-18 and 20-27 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 and 20-28 of copending Application No. 10/574,141 and claims 1-22 and 24-35 of copending Application No. 10/574,140. The Applicants acknowledge this provisional rejection and will address the rejection if the claims of the applications are deemed allowable and remain subject of a non-provisional double patenting rejection.

Claim Rejections under 35 USC §102

- I. In the Office Action, Claims 1, 2, 5, 8, 10, 11, 13-18 and 22-27 stand rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent No. 6,593,904 ("Marz").

Claims 1, 2, 5, 8, 10, 11, 13-18 and 22-27 are allowable

In order to maintain a rejection based on anticipation or obviousness, the prior art in combination must show all of the claimed limitations, See, e.g., M.P.E.P. §706.02; §2141. Applicants respectfully submit that Marz does not show all of the claim

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limitations of independent claims 1 and 18. For example, Marz does not teach or suggest a grouping of pixels into a plurality of groups, with each group including a plurality of pixels, as recited in claim 1.

In the Action, the Examiner alleges that Marz discloses the following claim limitation of claim 1. The office refers applicants to Marz at col. 6, lines 43-59.

“...the pixels being grouped into a plurality of groups with each group including a plurality of pixels, a number of pixels in each group corresponding to a number of the different views, each pixel of each group corresponding to one of the plurality of different views of the three dimensional image, wherein all the pixels in the plurality of groups corresponding to one of the views display the different image of the one of the views...”

In the Action, the Examiner further alleges that Marz discloses the following claim limitation of claim 1. The office refers applicants to Marz at col. 5, lines 28-53.

a grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different. [Emphasis Added]

Applicants respectfully submit that the foregoing characterization of Marz is not correct and Marz does not disclose the claim recitations of claim 1 shown above.

Relevant portions of Marz are repeated below.

Marz – cited at col. 5, lines 28-53:

To be able to change the viewing angle range within which the image displayed by matrix 17 with liquid crystal cells 9 is visible to the observer, the difference in potential between reference potential V..sub.0 at counter-electrode 7 and the potential level of gray-scale signals 20 switched through to pixel electrodes 3 can be adjusted. This purpose is served by an

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adjustment device 24 which changes reference potential V.sub.0 as a function of an adjustment signal 26 generated, in this case for example, manually via a control element 25. As suggested by signal path 27, shown as a dashed line, the potential level of gray-scale signals 20 can also be changed as an alternative to changing reference potential V.sub.0 by superimposing a variable offset voltage or a variable offset value in the case of digital gray-scale signals.

Column-control unit 18 contains a correction device 28, to which adjustment device 24 reports the presently adjusted reference potential V.sub.0. Gray-scale signals 20' are distorted, based on information concerning the typical dependence between the optical transparency of liquid crystal cells 9 and the voltage applied to them shown in FIG. 3 and in dependence on the potential difference between gray-scale signals 20' and reference potential V.sub.0 in correction device 28, before being applied to column electrodes 5, in such a way that an at least approximately linear relationship results between the optical transparency of liquid crystal cells 9 and undistorted gray-scale signals 20'.

The cited portions of Marz merely teach an ability to change the viewing angle within which the image is visible to a viewer by adjusting the potential difference between the counter-electrode 7 and the potential level of gray-scale signals 20. This is achieved in one way by Adjustment device 24 which changes the reference potential in accordance with an adjustment signal 26. Alternatively, Marz teaches that the viewing angle may be changed by superimposing a variable offset voltage or a variable offset value in the case of digital gray-scale signals to the potential level of the gray-scale signals 20. However, it is respectfully submitted that none of the approaches disclosed in Marz teach or suggest grouping pixels into a plurality of groups, i.e., group 1, group 2, etc. with each group including a plurality of pixels, i.e., group 1 including {pixel 1 – pixel 7}, group 2 including {pixel 8 – pixel 15}, group 3 including {pixel 16 – pixel 23} and so on. As such, Marz does not teach or suggest, where a number of pixels in each group correspond to a number of different views. For example, pixels 1, 8 and 16 correspond to first view displaying a first image and pixels 2, 9 and 17 correspond to a second view displaying a second image and so on.

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In the Action, the Examiner equates correction device 28 of Marz to Applicant's grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for the optical characteristics of each pixel based on a second viewing angle. Based on the discussion above, it is respectfully submitted that the Examiner has mischaracterized Marz in that no such correspondence can exist between Marz's correction device and Applicant's grey scale compensation device because Marz does not teach pixels within a plurality of groups of pixels.

The correction device 28 of Marz receives a report of the presently adjusted reference potential and distorts the gray-scale signals 20 based in part on information in partial dependence on the potential difference between gray-scale signals 20' and reference potential V.sub.0 in correction device 28, before being applied to column electrodes 5, in such a way that an at least approximately linear relationship results between the optical transparency of liquid crystal cells 9 and undistorted gray-scale signals 20'. However, there appears to be no teaching or suggestion in Marz of *resolving a problem of grey scale dependency as the light rays of the different views travel through the liquid crystal layer at different angles, which is resolved by the grey scale compensation device of the invention by substantially normalizing a gray scale displayed by a group of pixels to that of the other pixels in the group for any given location in the display panel.* For example, Applicants normalize the pixels within a group of pixels relative to the other pixels in the group. Assume that the pixel group comprises pixels 1-7. Then Applicants normalize certain pixels in that group, e.g., pixels 3 and 5 relative to pixels 1, 2, 4, 6 and 7.

As argued above, and repeated herein, Marz does not teach *pixels being grouped into a plurality of groups with each group including a plurality of pixels.* As such, Marz does not teach *normalizing a gray scale displayed by a group of*

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pixels to that of the other pixels in the group for any given location in the display panel.

Marz – cited at col. 6, lines 43 - 59:

FIG. 10 shows an embodiment in which several image signal sources 47, 48 and 49 supply image signals 50, 51 and 52 of different views of a three-dimensional object. Image signals 50, 51 and 52 are supplied to active matrix liquid crystal display 30 via a switchover device 54 controlled by an adjustment device 54. Via an operating element 55, adjustment device 53 can be used to gradually set different reference potentials for counter-electrode 7 of active matrix liquid crystal display 30, one reference potential for counter-electrode 7 of active matrix liquid crystal display 30 being assigned to each image signal 50, 51 and 52 switched through to active matrix liquid crystal display 30. The result of this is that active matrix liquid crystal display 30 generates different images 56, 57 and 58 which display the three-dimensional object in different views for different viewing angle ranges, thus resulting in a three-dimensional display of the object.

Marz cited at Fig. 10 and col. 6, lines 43 – 59 discloses three signal sources 47, 48 and 49 which supply respective image signals 50, 51 and 52 of different views of a three-dimensional object. However, it appears that no such disclosure is made of: *THE PIXELS BEING GROUPED INTO A PLURALITY OF GROUPS WITH EACH GROUP INCLUDING A PLURALITY OF PIXELS, A NUMBER OF PIXELS IN EACH GROUP CORRESPONDING TO A NUMBER OF THE DIFFERENT VIEWS, EACH PIXEL OF EACH GROUP CORRESPONDING TO ONE OF THE PLURALITY OF DIFFERENT VIEWS OF THE THREE DIMENSIONAL IMAGE, WHEREIN ALL THE PIXELS IN THE PLURALITY OF GROUPS CORRESPONDING TO ONE OF THE VIEWS DISPLAY THE DIFFERENT IMAGE OF THE ONE OF THE VIEWS*, as recited in independent claims 1 and 18.

The cited portion of Marz merely discloses that the three-dimensional object is displayed in **different views for different viewing angle ranges** to generate different images 56, 57 and 58 by utilizing adjustment device 53 to gradually set **different reference potentials for the counter-electrode 7** (which is common to all of the light transmitting pixel electrodes) to each image signal

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50, 51 and 52 supplied from several image signal sources 47, 48 and 49. There is no teaching or suggestion of grouping pixels into different pixel groups.

It is respectfully submitted that Marz does not appear to disclose, suggest or provide motivation for the limitations set forth in claims 1, 2, 5, 8, 10, 11, 13-18 and 22-27. In view of the above, Applicants respectfully submit that the rejections of claims 1, 2, 5, 8, 10, 11, 13-18 and 22-27 under 35 USC §102 are improper and should be withdrawn.

Claim Rejections under 35 USC 103

- I. The Office has rejected claims 3, 4, 9, 12 and 20-22 under 35 U.S.C. §103(a) as being unpatentable over Marz in view of U.S. Patent No. 6,344,837 ("Gelsey"). Applicants respectfully traverse the rejections.

Claims 3, 4, 9, 12 and 20-22 are allowable

As explained above, the cited portions of Marz do not disclose or suggest each and every element of independent claims 1 and 18 from which claim {3, 4, 9, 12} and {20-22} respectively depend. Gelsey does not disclose each of the elements of claims 1 and 18 that are not disclosed by Marz. For example, the cited portions of Gelsey fail to disclose or suggest,

the pixels being grouped into a plurality of groups with each group including a plurality of pixels, a number of pixels in each group corresponding to a number of the different views, each pixel of each group corresponding to one of the plurality of different views of the three dimensional image, wherein all the pixels in the plurality of groups corresponding to one of the views display the different image of the one of the views;

a grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different.

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Gelsey is merely cited for teaching a three dimensional display having a plurality of line sources of illumination.

Hence claims 1 and 18 are allowable and claims {3, 4, 9, 12} and {20-22} are allowable, at least by virtue of their respective dependence from claims 1 and 18.

II. The Office has rejected claims 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Marz in view of U.S. Patent Application No. 2001/0028356 ("Balogh"). Applicants respectfully traverse the rejections.

Claims 6 and 7 are *allowable*

As explained above, the cited portions of Marz do not disclose or suggest each and every element of independent claims 1 from which claim 6 and 7 depend. Balogh does not disclose each of the elements of claim 1 that are not disclosed by Marz. For example, the cited portions of Balogh fail to disclose or suggest,

the pixels being grouped into a plurality of groups with each group including a plurality of pixels, a number of pixels in each group corresponding to a number of the different views, each pixel of each group corresponding to one of the plurality of different views of the three dimensional image, wherein all the pixels in the plurality of groups corresponding to one of the views display the different image of the one of the views;

a grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different.

Gelsey is merely cited for teaching a three dimensional display having a plurality of line sources of illumination.

Hence claim 1 is allowable and claims 6 and 7 are allowable, at least by virtue of their respective dependence from claim 1.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-18 and 20-27 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-333-9643.

Respectfully submitted,



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